Total number of printed pages:2 **D/4th/DECE403**

2021

DIGITAL COMMUNICATION SYSTEMS

Full Marks:60

Time:2 hours

The figures in the margin indicates full marks of the question

Answer all question

A) Write down whether the following statements are TRUE/FALSE 1X20=20

1)Digital Communication system is more noisy than analog communication system.

2) Sampling a analog signal coverts the signal into discrete time signal.

3)Quantization is a process of converting infinite voltage level into finite voltage level.

4)To covert a analog signal to digital form first we perform quantization next sampling next encoding.

5)DPCM system we use repeater for regeneration of distorted signal.

6)Prediction technique for quantization is used for normal PCM system.

7)For a signal If the highest frequency present is W. then maximum sapling time interval is 2W.

8)Error coding adds extra bits for detection and correction of error signal received by digital receiver.

9)We do need antenna in PCM communication system.

10) We do not need antenna in BPSK communication system.

11)BASK modulation technique modulates only the phase of the carrier signal.

12)Differentiator is being used in BFSK receiver system.

13)Multipiler is used for generating BPSK signal.

14)If we increase the number of quantization level then quantization error will be reduced.

15)If we do not follow sampling theorem then reconstruction of original may not be possible at receiver point.

16)Transmitting multiple source signals simultaneously in time domain is possible by TDM techniques.

17)Transmitter side of TDM basically converts serial data into parallel form.

18)Encoding quantized signal n number of finite voltage level gets converted into binary voltage level.

19)DM is one type of DPCM only.

20)Difference between AM and BASK is that AM only modulates binary signal whereas BASK modulates analog signal.

B 2X6=12

1) If max frequency content in a analog signal is 10.5khz.Find out maximum sampling time interval in microsecond.
2) If total number of quantization level is 3 , then encode each level.
3) Plot BPSK signal for bit stream 101.
4) Plot BFSK signal for bit stream 001.
5) Plot BASK signal for bit stream 1011.
6) State sampling theorem.

C 7X4=28

1) Draw the block diagram of digital communication system (transmitter only) and explain each block function in brief.

2) Draw the block diagram of PCM system and explain each block function in brief.

3)Explain BASK generation with block diagram.

4)Explain sampling, quantization, encoding in brief to convert analog signal to digital.

5) Explain BPSK generation with block diagram.

6) Explain Quantization in detail with a help of transfer characteristics.

7) Explain Sampling in detail with drawing of sampled signal.